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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,107	06/08/2005	Changlong Ning	NL021254US	1511
24737 7590 02/21/2008 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510				
EXAMINER A. MINH D				
ART UNIT		PAPER NUMBER		
2821				
MAIL DATE		DELIVERY MODE		
02/21/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/538,107

**Applicant(s)**

NING, CHANGLONG

**Examiner**

Minh D. A

**Art Unit**

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11/20/07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/02)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

Applicant's communication filed on 11/20/07 has been carefully considered by the examiner. The arguments advanced therein are persuasive with respect to the rejections of record, and those rejections are accordingly withdrawn. In view of a further search, however, a new rejection is set forth below. In virtue of this filing and this amendment,

- Claims 1-10 are originally filed;
- Claims 11-20 are newly added (in virtue of this amendment); and thus
- Claims 1-20 are now presented in the instant application.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. ~~Claims 11, 13-14 are rejected under 35 U.S.C. 102(b) as being anticipated by~~ . . .  
Graham et al (U.S Patent 5, 144, 201). Regarding claim 11, Graham et al disclose, in  
figure 2-3, a high-pressure discharge lamp comprising: a discharge space (chamber  
(82) having a discharge space) including an ionizable discharge medium( mercury and  
gas) and at least two electrodes(84, 84') having electrode tips which are separated by  
distance d(Arc Distance A)( figure 1, col.7, lines 20-27); a lamp vessel(bulb(74))  
enclosing the discharge space; and feed-through elements(pair of wire lead(88, 88')  
which extend from the at least two electrodes(84,84') to an exterior; wherein the

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distance d(Arc distance A) between the electrode tips is less than 1.0 mm . Col.7, line 68 to col.8, line 1 and also table 1, shows Arc distance A, col.7, lines 45-64.

Regarding claim 13, Graham et al disclose, in figure 2-3, wherein the distance between the electrode tips ranges from 0.3 to 0.8 mm. See table 1 on col.7, lines 45-63.

Regarding claim 14, Graham et al disclose, in figure 2-3, wherein the distance between the electrode tips ranges from 0.3 to 0.6 mm. Col.8, lines 67-68.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 15 -16 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Graham et al (U.S. Patent No: 5, 144, 201) in view of Takeutu, Nobuyosi et al (EP 0917180 A1).

Regarding claim 15, Graham et al disclose all of claimed subject matters, as expressly recited in claim 1, except for the mercury density in the vessel (2) is higher than 0.3 mg/mm<sup>3</sup>.

Takeutu, Nobuyosi discloses the mercury density (volume) in the vessel (discharge space) is higher than 0.3 mg/mm<sup>3</sup>. See abstract and figure 1.

It would have been obvious to one having ordinary skill in the art to employ the mercury density in the vessel (1) is higher than 0.3 mg/mm<sup>3</sup> disclosed in Takeutu, Nobuyosi in the discharge device of Graham et al, to achieve the claimed invention. As

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disclosed in Reference of Takeutu, Nobuyosi, the motivation for the combination would be improved the lamp life and efficacy.

Regarding claim 16, Graham et al do not teach that, the mercury density in the vessel (2) from 0.4 to 0.7 mg/mm<sup>3</sup>.

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Takeutu, Nobuyosi discloses the mercury density (volume) in the vessel (1) is within a range 0.12 to .35 mg/mm<sup>3</sup>. See abstract and figure 1.

It would have been obvious to one having ordinary skill in the art to employ the mercury density in the vessel (1) is higher than 0.3 mg/mm<sup>3</sup> disclosed in Takeutu,

Nobuyosi in the discharge device of Graham to achieve the claimed invention. As disclosed in Reference of Takeutu, Nobuyosi, the motivation for the combination would be improved the lamp life and efficacy.

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However, the combination Graham et al and Takeutu, Nobuyosi obviously disclose all of the claimed limitations, except for the mercury density in the vessel (2) from 0.4 to 0.7 mg/mm<sup>3</sup>.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the mercury density in the vessel (2) ranges from 0.4 to 0.7 mg/mm<sup>3</sup> instead 0.12 to .35 mg/mm<sup>3</sup>, since, the different 0.4 to 0.7 mg/mm<sup>3</sup> may be used to discharge the lamp or it will be understood by those skilled in the art that the range of mg/mm<sup>3</sup> is approximately 0.4 to 0.7 mg/mm<sup>3</sup> may be used as the basis of the design. For example, a variable mg/mm<sup>3</sup> and a size of density may be selected. A known approximately 0.4 to 0.7 mg/mm<sup>3</sup> on the basis of its suitability for the intended use as matter of obvious to a person skilled in the art.

5. Claims 17-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable

over by Graham et al., et al (U.S. Patent No. 5,144,201) in view of Honda et al (U.S. Patent No. 6, 307, 321,

Regarding claims 17-18, Graham et al disclose all of claimed subject matters, as expressly recited in claim 1, except for wherein the lamp vessel (bulb) comprises a bulging section communicating with at least two feed-through channels having an inner diameter smaller than the bulging section and wherein the bulging section is substantially cylindrical over the distance  $d$  and has an internal cross-sectional diameter  $D_i$  ranging from 1.5 to 4.5 mm and a length  $L$  ranging from 4 to 8 mm.

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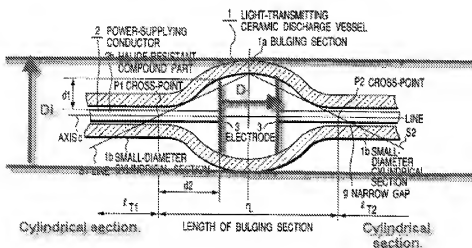


FIG. 2

Honda et al disclose, in figure 2 above, wherein the lamp vessel comprises a bulging section (1a) communicating with at least two feed-through channels (see figure 2 above, cylindrical section) having an inner diameter(1b) smaller than the bulging section(1a) and wherein the bulging section(1a) is substantially cylindrical over the distance d (D)( see label in figure 2) and has an internal cross-sectional diameter Di( see label in figure 2) ranging from 1.5 to 4.5 mm ( see table 1, col.10, lines 1-10) and a length L ranging from 4 to 8 mm (see col.9, lines 37-40).

It would have been obvious to one having ordinary skill in the art to employ the wherein the lamp vessel comprises a bulging section (1a) communicating with at least two feed-through channels (see figure 2, cylindrical section) having an inner diameter(1b) smaller than the bulging section(1a) and wherein the bulging section is substantially cylindrical over the distance d and has an internal cross-sectional diameter Di ranging from 1.5 to 4.5 mm and a length L ranging from 4 to 8 mm

disclosed in Reference of Honda et al in the discharge device of Reference of Graham

to achieve the claimed invention. As disclosed in Reference of Honda et al, the motivation for the combination would be improved the lamp life and high efficiency for the high pressure discharge lamp and lighting apparatus.

Regarding claim 20, Graham et al disclose all of claimed subject matters, as expressly recited in claim 1, except for wherein the lamp vessel is made of a transparent ceramic material chosen from a group consisting of sub-micro

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polycrystalline aluminum (PCA), yttrium aluminum garnet (YAG), Y2O3, MgAl2O4, and aluminum nitride (AlN).

Honda et al disclose, in figure 2, wherein the lamp vessel is made of a transparent ceramic material chosen from a group consisting of sub-micro polycrystalline aluminum (PCA), yttrium aluminum garnet (YAG), Y2O3, MgAl2O4, and aluminum nitride (AlN). Col.2, lines 45-56.

It would have been obvious to one having ordinary skill in the art to employ the transparent ceramic material chosen from a group consisting of sub-micro polycrystalline aluminum (PCA), yttrium aluminum garnet (YAG), Y2O3, MgAl2O4, and aluminum nitride (AlN). Col.2, lines 45-56 disclosed in Reference of Honda et al in the discharge device of Reference of Graham et al to achieve the claimed invention. As disclosed in Reference of Honda et al, the motivation for the combination would be improved the long lifetime for discharge lamp and an optimum performance.

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6. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over by Graham et al, (U.S. Patent No. 5, 144, 201.) in view of Genz et al (U.S Patent No. 6, 054, 811).

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Regarding claim 19, Graham, et al disclose all of claimed subject matters, as expressly recited in claim 11, except for wherein a wall load inside of the lamp vessel during operation ranges from 40 to 150 W/cm<sup>2</sup>

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Genz et al disclose, in figure 1, wherein a wall load inside of the lamp vessel during operation ranges from 40 to 150 W/cm<sup>2</sup>. Col.6, lines 46-47.



It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the wall load inside of the lamp vessel during operation ranges from 40 to 150 W/cm<sup>2</sup> disclosed in Reference of Genz in the discharge device of Reference of Graham, to achieve the claimed invention. As disclosed in Reference of Genz et al, the motivation for the combination would be obtained the high wattage for operation of discharge lamp.

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***Allowable Subject Matter***

7. Claims 1-10 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Prior art does not teach that, a lamp vessel made of a transparent ceramic material, enclosing a discharge space comprising an ionizable discharge medium and at least two electrodes having electrode tips that are spaced apart at a mutual distance, d, and electrical feed-through elements which extend from the at least two electrodes to an exterior of the lamp, wherein the distance d between the electrode tips is less than 1.0 mm and the mercury density in the lamp vessel is higher than 0.3 mg/mm<sup>3</sup>.

The remaining dependent claims 2-10 are allowable for at least above reason.

***Citation of relevant prior art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Prior art Ono et al (U.S. Patent No. 6,545,430) discloses a high pressure discharge lamp.

Prior art Ikeuchi et al (U.S. Patent No. 5,905, 341) discloses a high pressure mercury ultraviolet lamp.

Prior art Van Vleet et al. (U.S. Patent No. 5,973,453) discloses a ceramic metal halide discharge lamp.

### ***Inquiry***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Dieu A whose telephone number is (571) 272-1817. The examiner can normally be reached on M-F (5:30 AM-2: 45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Owens Douglas W can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Examiner

Minh A

Art Unit 2821

2/10/08

/Douglas W Owens/  
Supervisory Patent Examiner, Art Unit 2821  
February 18, 2008

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